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### **Supplemental Material**

#### **Prenatal Exposure to Perfluoroalkyl Substances and Child Behavior at Age 12: A PELAGIE Mother–Child Cohort Study**

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Table S1: PELAGIE mother-child cohort, comparisons between included and not included in the study

<b>PELAGIE</b>	<b>Not included</b> N=2977	<b>Included</b> N=444	Total (N=3421)	p value
<b>Mother's characteristics</b>				
<b>Living area at inclusion - Urban rural</b>				0.738
N-Miss	9 (0.3%)	1 (0.2%)	10 (0.3%)	
Rural	2258 (75.8%)	344 (77.5%)	2602 (76.1%)	
Urbain	710 (23.8%)	99 (22.3%)	809 (23.6%)	
<b>Mother's age at inclusion</b>				< 0.001
Mean (SD)	29.99 (4.35)	30.80 (3.88)	30.10 (4.30)	
<b>Age group</b>				< 0.001
< 25 years	358 (12.0%)	23 (5.2%)	381 (11.1%)	
25 - < 30 years	1189 (39.9%)	172 (38.7%)	1361 (39.8%)	
30 - < 35 years	1024 (34.4%)	178 (40.1%)	1202 (35.1%)	
≥35	406 (13.6%)	71 (16.0%)	477 (13.9%)	
<b>Mother's pre-pregnancy BMI</b>				0.038
N-Miss	23	3	26	
Mean (SD)	22.49 (4.14)	22.05 (3.73)	22.43 (4.09)	
<b>BMI categories</b>				0.047
N-Miss	23	3	26	
<18.5 kg/m <sup>2</sup>	219 (7.4%)	38 (8.6%)	257 (7.6%)	
18.5kg/m <sup>2</sup> - < 25kg/m <sup>2</sup>	2195 (74.3%)	345 (78.2%)	2540 (74.8%)	
25kg/m <sup>2</sup> - < 30kg/m <sup>2</sup>	387 (13.1%)	45 (10.2%)	432 (12.7%)	
30kg/m <sup>2</sup> or more	153 (5.2%)	13 (2.9%)	166 (4.9%)	
<b>Mother's education</b>				< 0.001
N-Miss	8	0	8	
< 12 years	600 (20.2%)	48 (10.8%)	648 (19.0%)	
12 years	564 (19.0%)	71 (16.0%)	635 (18.6%)	
> 12 - <15 years	854 (28.8%)	117 (26.4%)	971 (28.5%)	
≥ 15 years	951 (32.0%)	208 (46.8%)	1159 (34.0%)	
<b>Tobacco status</b>				0.01
N-Miss	31	3	34	
Non or former smoker	2093 (71.0%)	341 (77.3%)	2434 (71.9%)	
Smoker at the beginning of pregnancy and stopped at inclusion	421 (14.3%)	57 (12.9%)	478 (14.1%)	
Smoker at inclusion	432 (14.7%)	43 (9.8%)	475 (14.0%)	
<b>Fish intake before pregnancy</b>				< 0.001
N-Miss	13	1	14	
<1 once/month	576 (19.4%)	52 (11.7%)	628 (18.4%)	
at least once a month	1615 (54.5%)	256 (57.8%)	1871 (54.9%)	
at least twice a week	773 (26.1%)	135 (30.5%)	908 (26.7%)	
<b>Parity at inclusion</b>				0.008
N-Miss	10	1	11	
0	1352 (45.6%)	169 (38.1%)	1521 (44.6%)	
1	1085 (36.6%)	176 (39.7%)	1261 (37.0%)	
≥2	530 (17.9%)	98 (22.1%)	628 (18.4%)	
<b>Child's characteristics</b>				
<b>Gestational age</b>				
N-Miss	25	0	25	< 0.001
Mean (SD)	39.13 (2.47)	39.58 (1.25)	39.19 (2.35)	
<b>Birth weight</b>				
N-Miss	35	0	35	< 0.001
Mean (SD)	3346.23 (563.21)	3467.26 (439.17)	3362.10 (550.01)	
<b>Small for gestational age (&lt;10%)</b>				
N-Miss	63	0	63	< 0.001
Non or former smoker	2699 (92.6%)	431 (97.1%)	3130 (93.2%)	
Yes	215 (7.4%)	13 (2.9%)	228 (6.8%)	
<b>Sex at birth</b>				0.96
N-Miss	28	0	28	
Male	1484 (50.3%)	224 (50.5%)	1708 (50.3%)	
Female	1465 (49.7%)	220 (49.5%)	1685 (49.7%)	

N-miss: number of missing values; BMI: body mass index; p.value: Student test for quantitative variables or Chi<sup>2</sup> for categorical variables.

Table S2: Parent-reported Strengths and Difficulties Questionnaire (SDQ) - Scores at age 12, PELAGIE mother-child cohort, Brittany, France (n=444). Values reported are the median (minimum-maximum) scores.

	Subscale score							
Sex	Externalizing	Hyperactivity	Conduct	Internalizing	Peer relationships	Emotions	Total difficulties	Prosocial behavior
<b>Total</b>	3 (0-17)	2 (0-10)	1 (0-8)	3 (0-15)	0 (0-7)	2 (0-10)	0 (7-24)	9 (2-10)
<b>Males</b>	4 (0-17)	3 (0-10)	1 (0-8)	3 (0-14)	1 (0-7)	2 (0-10)	7 (0-24)	9 (2-10)
<b>Females</b>	2 (0-13)	1 (0-9)	0 (0-6)	4 (0-15)	0 (0-7)	3 (0-10)	7 (0-20)	9 (2-10)
<b>p-value</b>	8.2 10 <sup>-8</sup>	3 10 <sup>-9</sup>	0.006	0.009	0.2	0.0002	0.02	0.06

\* Wilcoxon test p-value comparing males vs. females

Table S3: Self-reported Dominic Interactive for Adolescents (DIA) - Scores at age 12, PELAGIE mother-child cohort, Brittany, France (n=444). Values reported are the median (minimum-maximum) scores.

	Subscale scores								
Sex at birth	Externalizing	ADHD	Opposition defiant disorder	Conduct disorder	Internalizing	Anxiety	Major depressive disorder	Specific phobia	Substance abuse disorder
<b>Total</b>	7 (0-28)	5 (0-18)	1 (0-9)	0 (0-4)	10 (0-39)	5 (0-15)	3 (0-17)	1 (0-6)	0 (0-2)
<b>Males</b>	8 (0-28)	6 (0-18)	1 (0-9)	0 (0-4)	9 (0-39)	5 (0-15)	3 (0-17)	1 (0-6)	0 (0-2)
<b>Females</b>	6 (0-24)	4 (0-16)	1 (0-9)	0 (0-3)	11 (0-31)	5 (0-15)	3 (0-12)	2 (0-6)	0 (0-0)
<b>p-value</b>	0.0001	2.8 10 <sup>-5</sup>	0.6	0.002	0.002	0.002	0.4	1.1 10 <sup>-12</sup>	0.005

ADHD: Attention deficit / Hyperactivity disorder; \* Wilcoxon test p-value comparing males vs. females

Table S4: Parent-reported Strengths and Difficulties Questionnaire (SDQ) - Scores at age 12 – alpha de Cronbach

SDQ subscale	Emotion	Conduct	Hyperactivity	Peer	Prosocial	Internalizing	Externalizing
<b><math>\alpha</math> de Cronbach</b>	0.69	0.49	0.76	0.62	0.69	0.69	0.76
<b><math>\alpha</math> de Cronbach (polychoric)</b>	0.78	0.75	0.84	0.82	0.73	0.81	0.86

Table S5: Self-reported Dominic Interactive for Adolescents (DIA) - Scores at age 12 – alpha de Cronbach

DIA subscale	SPH	GAD	MDD	SA	ODD	CD	ADHD	Internalizing	Externalizing
<b><math>\alpha</math> de Cronbach</b>	0.47	0.67	0.72	0.33	0.70	0.34	0.83	0.78	0.85
<b><math>\alpha</math> de Cronbach (tetrachoric)</b>	0.58	0.80	0.87	0.75	0.85	0.55	0.91	0.87	0.89

Table S6: Associations between prenatal exposure measured in cord serum and behavior scores at age 12 – Overall and stratified on child sex –PELAGIE mother-child cohort

	PFOA (log <sub>2</sub> µg/L)	PFNA (log <sub>2</sub> µg/L)	PFDA (log <sub>2</sub> µg/L)	PFUnDA (log <sub>2</sub> µg/L)	PFHxS (log <sub>2</sub> µg/L)	PFOS (log <sub>2</sub> µg/L)
Outcome	n=444 aMR (95%CI) p.inter <sup>b</sup>	n=433 aMR (95%CI) p.inter <sup>b</sup>	n=406 aMR (95%CI) p.inter <sup>b</sup>	n=422 aMR (95%CI) p.inter <sup>b</sup>	n=444 aMR (95%CI) p.inter <sup>b</sup>	n=444 aMR (95%CI) p.inter <sup>b</sup>
SDQ Externalizing	Total <sup>a</sup> Females <sup>c</sup> Males <sup>c</sup>	1.18 (1.03,1.34) 1.2 (0.97,1.49) 1.16 (0.98,1.36)	0.80 1.14 (1,1.29) 1.08 (0.92,1.28)	0.58 1.07 (0.94,1.21) 0.99 (0.83,1.18)	0.38 1.00 (0.88,1.13) 0.99 (0.85,1.16)	0.66 1.02 (0.9,1.16) 0.98 (0.84,1.14)
SDQ Hyperactivity	Total <sup>a</sup> Females <sup>c</sup> Males <sup>c</sup>	1.2 (1.04,1.4) 1.2 (0.92,1.56) 1.18 (0.99,1.41)	0.94 1.18 (1.02,1.36) 1.12 (0.94,1.35)	0.80 1.11 (0.96,1.3) 1.05 (0.86,1.27)	0.66 0.99 (0.85,1.14) 1.01 (0.85,1.20)	0.42 1.07 (0.93,1.23) 1.04 (0.88,1.23)
DIA Internalizing	Total <sup>a</sup> Females <sup>c</sup> Males <sup>c</sup>	1.05 (0.96,1.14) 0.99 (0.87,1.13) 1.11 (0.99,1.24)	0.35 1.08 (1,1.17) 1.14 (1.02,1.28)	0.52 1.11 (1.02,1.21) 1.13 (0.99,1.29)	0.99 1.06 (0.97,1.15) 1.07 (0.96,1.20)	0.52 1.02 (0.94,1.11) 1.04 (0.93,1.16)
DIA Anxiety	Total <sup>a</sup> Females <sup>c</sup> Males <sup>c</sup>	1.06 (0.98,1.16) 1.01 (0.88,1.14) 1.12 (0.99,1.25)	0.53 1.1 (1.01,1.19) 1.15 (1.02,1.29)	0.61 1.11 (1.02,1.21) 1.15 (1.01,1.31)	0.80 1.07 (0.98,1.16) 1.08 (0.97,1.21)	0.58 1.02 (0.94,1.11) 1.03 (0.92,1.15)
DIA Depression	Total <sup>a</sup> Females <sup>c</sup> Males <sup>c</sup>	1.08 (0.97,1.21) 1.07 (0.9,1.28) 1.11 (0.96,1.28)	0.97 1.11 (1,1.23) 1.14 (0.99,1.32)	0.94 1.14 (1.01,1.27) 1.13 (0.96,1.32)	0.60 1.05 (0.95,1.17) 1.05 (0.92,1.21)	0.39 1.02 (0.92,1.13) 1.01 (0.88,1.16)

SDQ: Strengths and Difficulties Questionnaire, DIA: Dominic Interactive for Adolescents, PFOA: perfluorooctanoic acid, PFNA: perfluorononanoic acid, PFDA: perfluorodecanoic acid, PUnFDA: perfluoroundecanoic acid, PFHxS: perfluorohexanesulfonic acid, PFOS: perfluorooctane sulfonic acid, aMR: adjusted mean ratio, CI: confidence interval

Negative binomial regression models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week), smoking status at inclusion (smoker vs. nonsmoker)

<sup>a</sup> Models further adjusted for child sex; <sup>b</sup> p-value of the interaction term in models further adjusted for child sex and including an interaction term between sex and exposure; <sup>c</sup> stratified on child sex.

Table S7: Associations between prenatal exposure measured in cord serum and behavior scores at age 12 – sensitivity analysis – Breastfeeding, PELAGIE mother-child cohort

Outcome	Adjusted for breastfeeding <sup>a</sup>	Exposure											
		PFOA ( $\log_2 \mu\text{g/L}$ )		PFNA ( $\log_2 \mu\text{g/L}$ )		PFDA ( $\log_2 \mu\text{g/L}$ )		PFUnDA ( $\log_2 \mu\text{g/L}$ )		PFHxS ( $\log_2 \mu\text{g/L}$ )		PFOS ( $\log_2 \mu\text{g/L}$ )	
		n= 368	aMR	n= 359	aMR	n= 337	aMR	n= 349	aMR	n= 368	aMR	n= 368	aMR
<b>SDQ Externalizing</b>	No	1.18	(1.03,1.34)	1.16	(1.02,1.32)	1.13	(0.99,1.29)	1.05	(0.92,1.19)	1.02	(0.90,1.16)	1.07	(0.94,1.22)
	Yes	1.17	(1.03,1.34)	1.16	(1.02,1.32)	1.14	(0.99,1.30)	1.06	(0.93,1.21)	1.02	(0.90,1.16)	1.08	(0.94,1.23)
<b>SDQ Hyperactivity</b>	No	1.19	(1.02,1.39)	1.20	(1.03,1.39)	1.17	(1.00,1.38)	1.04	(0.89,1.21)	1.06	(0.92,1.23)	1.09	(0.93,1.27)
	Yes	1.18	(1.02,1.38)	1.20	(1.03,1.39)	1.18	(1.00,1.38)	1.05	(0.90,1.23)	1.06	(0.92,1.22)	1.09	(0.94,1.27)
<b>DIA Internalizing</b>	No	1.06	(0.97,1.17)	1.08	(0.99,1.17)	1.12	(1.02,1.23)	1.07	(0.97,1.17)	1.00	(0.92,1.09)	1.01	(0.92,1.11)
	Yes	1.05	(0.96,1.16)	1.08	(0.99,1.17)	1.13	(1.03,1.24)	1.07	(0.98,1.18)	1.00	(0.91,1.09)	1.01	(0.92,1.11)
<b>DIA Anxiety</b>	No	1.08	(0.98,1.19)	1.10	(1.00,1.19)	1.13	(1.03,1.25)	1.08	(0.98,1.18)	1.00	(0.92,1.10)	1.00	(0.92,1.10)
	Yes	1.07	(0.98,1.18)	1.09	(1.00,1.19)	1.14	(1.04,1.25)	1.08	(0.99,1.19)	1.00	(0.92,1.09)	1.00	(0.92,1.10)
<b>DIA Depression</b>	No	1.08	(0.96,1.22)	1.09	(0.98,1.22)	1.15	(1.02,1.30)	1.08	(0.96,1.21)	1.00	(0.90,1.12)	1.01	(0.90,1.14)
	Yes	1.08	(0.96,1.21)	1.09	(0.98,1.22)	1.16	(1.02,1.31)	1.09	(0.97,1.22)	1.00	(0.89,1.11)	1.01	(0.90,1.13)

SDQ: Strengths and Difficulties Questionnaire, DIA: Dominic Interactive for Adolescents, PFOA: perfluoroctanoic acid, PFNA: perfluorononanoic acid, PFDA: perfluorodecanoic acid, PFUnDA: perfluoroundecanoic acid, PFHxS: perfluorohexanesulfonic acid, PFOS: perfluorooctane sulfonic acid, aMR: adjusted mean ratio, CI: confidence interval

Negative binomial regression models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week), smoking status at inclusion (smoker vs. nonsmoker) and child sex; <sup>a</sup> breastfeeding (none, ≤ 3 months, > 3 months)

Table S8: Associations between prenatal exposure measured in cord serum and behavior scores at age 12 – sensitivity analysis – parental mental health (SF36 Emotional well-being), PELAGIE mother-child cohort

Outcome	Adjusted for SF36-EWB <sup>a</sup>	Exposure											
		PFOA ( $\log_2 \mu\text{g/L}$ )		PFNA ( $\log_2 \mu\text{g/L}$ )		PFDA ( $\log_2 \mu\text{g/L}$ )		PFUnDA ( $\log_2 \mu\text{g/L}$ )		PFHxS ( $\log_2 \mu\text{g/L}$ )		PFOS ( $\log_2 \mu\text{g/L}$ )	
		n= 429	aMR	n= 420	aMR	n= 393	aMR	n= 408	aMR	n= 429	aMR	n= 429	aMR
<b>SDQ Externalizing</b>	No	1.18	(1.03,1.36)	1.13	(1.00,1.29)	1.06	(0.93,1.21)	1.00	(0.89,1.14)	1.01	(0.89,1.14)	1.06	(0.93,1.20)
	Yes	1.17	(1.02,1.34)	1.14	(1.01,1.29)	1.06	(0.94,1.21)	1.00	(0.89,1.14)	1.00	(0.89,1.13)	1.04	(0.91,1.18)
<b>SDQ Hyperactivity</b>	No	1.21	(1.04,1.42)	1.17	(1.02,1.36)	1.11	(0.95,1.30)	1.00	(0.86,1.16)	1.04	(0.91,1.21)	1.07	(0.92,1.24)
	Yes	1.20	(1.03,1.40)	1.18	(1.02,1.36)	1.11	(0.96,1.29)	1.00	(0.87,1.16)	1.04	(0.90,1.20)	1.05	(0.91,1.22)
<b>DIA Internalizing</b>	No	1.08	(0.99,1.18)	1.09	(1.00,1.18)	1.11	(1.02,1.21)	1.07	(0.98,1.16)	1.02	(0.94,1.11)	1.04	(0.96,1.13)
	Yes	1.08	(0.99,1.18)	1.09	(1.00,1.18)	1.11	(1.02,1.21)	1.07	(0.98,1.16)	1.02	(0.94,1.11)	1.04	(0.95,1.13)
<b>DIA Anxiety</b>	No	1.10	(1.00,1.20)	1.11	(1.02,1.20)	1.12	(1.03,1.23)	1.08	(1.00,1.17)	1.03	(0.95,1.12)	1.04	(0.95,1.13)
	Yes	1.10	(1.00,1.20)	1.11	(1.02,1.20)	1.13	(1.03,1.23)	1.08	(1.00,1.17)	1.03	(0.95,1.12)	1.04	(0.96,1.13)
<b>DIA Depression</b>	No	1.11	(0.99,1.25)	1.11	(1.00,1.24)	1.14	(1.01,1.28)	1.06	(0.95,1.18)	1.03	(0.92,1.14)	1.04	(0.93,1.16)
	Yes	1.11	(0.98,1.24)	1.12	(1.00,1.24)	1.14	(1.01,1.27)	1.06	(0.95,1.18)	1.02	(0.92,1.14)	1.03	(0.92,1.15)

SDQ: Strengths and Difficulties Questionnaire, DIA: Dominic Interactive for Adolescents, PFOA: perfluoroctanoic acid, PFNA: perfluorononanoic acid, PFDA: perfluorodecanoic acid, PFUnDA: perfluoroundecanoic acid, PFHxS: perfluorohexanesulfonic acid, PFOS: perfluorooctane sulfonic acid, aMR: adjusted mean ratio, CI: confidence interval

Negative binomial regression models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week), smoking status at inclusion (smoker vs. nonsmoker) and child sex; <sup>a</sup> SF36 Emotional well-being subscale (continuous). Overall, 415/429 (96.7%) mothers and 14/429 fathers (3.3%) answered the SF36 questionnaire

Table S9 – Distribution of cord-blood serum concentrations of persistent organic pollutant

Exposure	LOD ( $\mu\text{g/L}$ )	N	N ND	% ND	Q10	Q25	Q50	Q75	Q90
PCB118	0.01	415	4	1.0	0.015	0.02	0.028	0.039	0.058
PCB138	0.01	402	0	0.0	0.035	0.049	0.0665	0.093	0.13
PCB153	0.01	415	0	0.0	0.065	0.0885	0.12	0.17	0.24
PCB170	0.01	415	6	1.4	0.016	0.023	0.032	0.043	0.061
PCB180	0.01	415	0	0.0	0.042	0.057	0.081	0.11	0.156
PCB183	0.01	415	295	71.1	<0.01	<0.01	<0.01	0.01	0.015
PCB187	0.01	415	105	25.3	<0.01	<0.01	0.014	0.02	0.03
PCB194	0.01	415	232	55.9	<0.01	<0.01	<0.01	0.013	0.019
PCB203	0.01	415	360	86.8	<0.01	<0.01	<0.01	<0.01	0.011
PCB74	0.02	415	338	81.5	<0.02	<0.02	<0.02	<0.02	0.03
PCB99	0.02	415	337	81.2	<0.02	<0.02	<0.02	<0.02	0.029
PBDE209	0.05/0.02	411	368	89.5	<0.02	<0.02	<0.02	<0.02	0.03
PBDE47	0.01	415	315	75.9	<0.01	<0.01	<0.01	<0.01	0.02
PBDE99	0.01	415	368	88.7	<0.01	<0.01	<0.01	<0.01	0.01
Dieldrin	0.01	413	128	31.0	<0.01	<0.01	0.015	0.022	0.032
Heptachlor epoxide	0.01/0.02	401	337	84.0	<0.01	<0.01	<0.01	0.01	0.02
Hexachlorobenzene	0.02	415	26	6.3	0.024	0.033	0.044	0.058	0.076
p,p'-DDE	0.02	415	12	2.9	0.084	0.13	0.19	0.33	0.5
$\gamma$ -HCH	0.01	415	389	93.7	<0.01	<0.01	<0.01	<0.01	<0.01
$\beta$ -HCH	0.01	415	4	1.0	0.026	0.037	0.051	0.076	0.12

LOD: limit of detection, ND: non-detected;  $\alpha$ -Endosulfan, dichlorodiphenyltrichloroethylene ( $p,p'$ -DDT), PCB28, PCB52 were detected in less than 5 % of samples

PCB: polychlorobiphenyl, HCH: hexachlorobenzene, p,p'-DDE : dichlorodiphenyldichloroethylene

Table S10: Associations between prenatal exposure measured in cord serum and behavior scores at age 12 – Results from the single pollutant approach, PELAGIE mother-child cohort

<b>Outcome</b>	<b>N</b>	<b>Exposure</b>	<b>aMR (95%CI)</b>
SDQ Externalizing		PCB118	1.04 (0.92,1.18)
SDQ Hyperactivity		PCB118	1.03 (0.89,1.19)
DIA Internalizing		PCB118	0.99 (0.91,1.08)
DIA Anxiety		PCB118	1 (0.92,1.09)
DIA Depression		PCB118	1.01 (0.9,1.12)
SDQ Externalizing		PCB138	1.04 (0.9,1.19)
SDQ Hyperactivity		PCB138	1 (0.85,1.17)
DIA Internalizing		PCB138	0.99 (0.91,1.08)
DIA Anxiety		PCB138	0.99 (0.9,1.08)
DIA Depression		PCB138	1.04 (0.93,1.17)
SDQ Externalizing		PCB153	1.07 (0.92,1.24)
SDQ Hyperactivity		PCB153	1.03 (0.87,1.21)
DIA Internalizing		PCB153	0.97 (0.88,1.06)
DIA Anxiety		PCB153	0.96 (0.87,1.05)
DIA Depression		PCB153	1.03 (0.91,1.17)
SDQ Externalizing		PCB170	1.13 (0.97,1.31)
SDQ Hyperactivity		PCB170	1.06 (0.9,1.26)
DIA Internalizing		PCB170	0.97 (0.88,1.06)
DIA Anxiety		PCB170	0.95 (0.86,1.04)
DIA Depression		PCB170	1.02 (0.9,1.16)
SDQ Externalizing		PCB180	1.12 (0.96,1.31)
SDQ Hyperactivity		PCB180	1.06 (0.89,1.27)
DIA Internalizing		PCB180	0.96 (0.87,1.05)
DIA Anxiety		PCB180	0.94 (0.85,1.03)
DIA Depression		PCB180	1.02 (0.89,1.15)
SDQ Externalizing		PCB183	1.1 (0.9,1.35)
SDQ Hyperactivity		PCB183	0.98 (0.78,1.24)
DIA Internalizing		PCB183	0.97 (0.85,1.11)
DIA Anxiety		PCB183	0.97 (0.85,1.1)
DIA Depression		PCB183	0.99 (0.83,1.18)
SDQ Externalizing		PCB187	1.02 (0.88,1.17)
SDQ Hyperactivity		PCB187	0.97 (0.82,1.14)
DIA Internalizing		PCB187	0.94 (0.86,1.03)
DIA Anxiety		PCB187	0.94 (0.86,1.03)
DIA Depression		PCB187	0.96 (0.86,1.09)
SDQ Externalizing		PCB194	1.09 (0.89,1.33)
SDQ Hyperactivity		PCB194	1.01 (0.8,1.27)
DIA Internalizing		PCB194	0.94 (0.83,1.08)
DIA Anxiety		PCB194	0.93 (0.81,1.06)
DIA Depression		PCB194	0.95 (0.8,1.13)
SDQ Externalizing		PCB203	0.95 (0.71,1.28)
SDQ Hyperactivity		PCB203	0.86 (0.61,1.2)
DIA Internalizing		PCB203	0.98 (0.81,1.18)
DIA Anxiety		PCB203	0.92 (0.77,1.11)
DIA Depression		PCB203	1.04 (0.81,1.32)
SDQ Externalizing		PCB74	1.09 (0.86,1.38)
SDQ Hyperactivity		PCB74	1.06 (0.81,1.38)
DIA Internalizing		PCB74	0.99 (0.85,1.16)
DIA Anxiety		PCB74	0.97 (0.84,1.13)
DIA Depression		PCB74	0.97 (0.79,1.19)
SDQ Externalizing		PCB99	0.97 (0.77,1.24)
SDQ Hyperactivity		PCB99	0.94 (0.71,1.23)
DIA Internalizing		PCB99	0.98 (0.84,1.15)
DIA Anxiety		PCB99	1.02 (0.87,1.18)
DIA Depression		PCB99	0.91 (0.74,1.11)
SDQ Externalizing		PBDE209	0.99 (0.75,1.31)

SDQ Hyperactivity	PBDE209	1.07 (0.78,1.48)
DIA Internalizing	PBDE209	1 (0.83,1.2)
DIA Anxiety	PBDE209	1.03 (0.86,1.23)
DIA Depression	PBDE209	0.94 (0.74,1.19)
SDQ Externalizing	PBDE47	1.06 (0.86,1.3)
SDQ Hyperactivity	PBDE47	0.98 (0.78,1.24)
DIA Internalizing	PBDE47	1.02 (0.9,1.17)
DIA Anxiety	PBDE47	1.01 (0.89,1.15)
DIA Depression	PBDE47	1.03 (0.87,1.22)
SDQ Externalizing	PBDE99	1.07 (0.82,1.41)
SDQ Hyperactivity	PBDE99	1.03 (0.76,1.42)
DIA Internalizing	PBDE99	1.06 (0.89,1.26)
DIA Anxiety	PBDE99	1.05 (0.88,1.24)
DIA Depression	PBDE99	1.03 (0.82,1.29)
SDQ Externalizing	Hexachlorobenzene	1.09 (0.94,1.26)
SDQ Hyperactivity	Hexachlorobenzene	1.09 (0.92,1.28)
DIA Internalizing	Hexachlorobenzene	0.98 (0.89,1.08)
DIA Anxiety	Hexachlorobenzene	0.98 (0.89,1.08)
DIA Depression	Hexachlorobenzene	0.99 (0.88,1.12)
SDQ Externalizing	p,p'-DDE	1.04 (0.96,1.12)
SDQ Hyperactivity	p,p'-DDE	1.01 (0.93,1.1)
DIA Internalizing	p,p'-DDE	0.99 (0.94,1.04)
DIA Anxiety	p,p'-DDE	0.99 (0.94,1.04)
DIA Depression	p,p'-DDE	0.99 (0.93,1.06)
SDQ Externalizing	$\beta$ -HCH	1.08 (0.97,1.19)
SDQ Hyperactivity	$\beta$ -HCH	1.05 (0.93,1.18)
DIA Internalizing	$\beta$ -HCH	1 (0.94,1.07)
DIA Anxiety	$\beta$ -HCH	1.01 (0.95,1.08)
DIA Depression	$\beta$ -HCH	1.02 (0.93,1.11)
SDQ Externalizing	Dieldrin_2	1.03 (0.83,1.27)
SDQ Externalizing	Dieldrin_3	0.98 (0.78,1.22)
SDQ Hyperactivity	Dieldrin_2	1.08 (0.85,1.38)
SDQ Hyperactivity	Dieldrin_3	1.05 (0.81,1.36)
DIA Internalizing	Dieldrin_2	1.06 (0.93,1.21)
DIA Internalizing	Dieldrin_3	0.88 (0.77,1.01)
DIA Anxiety	Dieldrin_2	1.03 (0.9,1.18)
DIA Anxiety	Dieldrin_3	0.87 (0.75,1)
DIA Depression	Dieldrin_2	1.11 (0.93,1.32)
DIA Depression	Dieldrin_3	0.83 (0.69,1)
SDQ Externalizing	heptachlor epoxide	0.87 (0.69,1.12)
SDQ Hyperactivity	heptachlor epoxide	0.9 (0.69,1.2)
DIA Internalizing	heptachlor epoxide	1.03 (0.89,1.20)
DIA Anxiety	heptachlor epoxide	1.05 (0.9,1.22)
DIA Depression	heptachlor epoxide	1.02 (0.84,1.25)
SDQ Externalizing	$\gamma$ -HCH	1.25 (0.91,1.74)
SDQ Hyperactivity	$\gamma$ -HCH	1.37 (0.96,1.97)
DIA Internalizing	$\gamma$ -HCH	1.28 (1.04,1.59)
DIA Anxiety	$\gamma$ -HCH	1.29 (1.06,1.58)
DIA Depression	$\gamma$ -HCH	1.31 (1,1.72)

SDQ: Strengths and Difficulties Questionnaire, DIA: Dominic Interactive for Adolescents, PFOA: perfluorooctanoic acid, PFNA: perfluorononanoic acid, PFDA: perfluorodecanoic acid, PUnFDA: perfluoroundecanoic acid, PFHxS: perfluorohexanesulfonic acid, PFOS: perfluorooctane sulfonic acid, aMR: adjusted mean ratio, CI: confidence interval

Negative binomial regression models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week), smoking status at inclusion (smoker vs. nonsmoker), child sex and total lipid level (g/L).

Table S11: Associations between prenatal exposure measured in cord serum and behavior scores at age 12 – sensitivity analysis – co-exposure to persistent organic pollutant, PELAGIE mother-child cohort

Outcome	Co-exposures	Exposure																	
		PFOA ( $\log_2 \mu\text{g/L}$ )						PFNA ( $\log_2 \mu\text{g/L}$ )						PFDA ( $\log_2 \mu\text{g/L}$ )					
		n	aMR	95%CI	n	aMR	95%CI	n	aMR	95%CI	n	aMR	95%CI	n	aMR	95%CI	n	aMR	95%CI
SDQ Externalizing	No	415	1.18	(1.03,1.36)	420	1.13	(1.00,1.29)	393	1.06	(0.93,1.21)	408	1.02	(0.89,1.15)	429	1.01	(0.89,1.14)	429	1.06	(0.93,1.20)
SDQ Hyperactivity	No	415	1.17	(1.01,1.37)	405	1.17	(1.01,1.35)	380	1.10	(0.94,1.28)	396	0.99	(0.85,1.15)	415	1.06	(0.92,1.23)	415	1.08	(0.93,1.25)
	Yes <sup>a</sup>	415	1.18	(1.01,1.37)	405	1.18	(1.02,1.37)	380	1.10	(0.94,1.28)	396	1.00	(0.86,1.16)	415	1.07	(0.93,1.24)	415	1.08	(0.93,1.25)
DIA Internalizing	No	413	1.05	(0.96,1.15)	403	1.09	(1.00,1.19)	378	1.11	(1.02,1.22)	394	1.07	(0.98,1.17)	413	1.02	(0.94,1.11)	413	1.03	(0.94,1.12)
	Yes <sup>a,b</sup>	413	1.06	(0.97,1.16)	403	1.10	(1.02,1.20)	378	1.11	(1.02,1.21)	394	1.09	(1.00,1.18)	413	1.04	(0.96,1.13)	413	1.04	(0.95,1.13)
DIA Anxiety	No	413	1.06	(0.97,1.16)	403	1.11	(1.02,1.20)	378	1.12	(1.03,1.22)	394	1.08	(1.00,1.18)	413	1.02	(0.94,1.11)	413	1.02	(0.94,1.12)
	Yes <sup>a,b</sup>	413	1.07	(0.99,1.17)	403	1.12	(1.03,1.21)	378	1.12	(1.03,1.22)	394	1.10	(1.01,1.20)	413	1.04	(0.96,1.13)	413	1.03	(0.95,1.13)
DIA Depression	No	413	1.08	(0.96,1.21)	403	1.12	(1.00,1.25)	378	1.14	(1.02,1.29)	394	1.07	(0.96,1.19)	413	1.03	(0.92,1.15)	413	1.03	(0.92,1.16)
	Yes <sup>a,b</sup>	413	1.10	(0.98,1.23)	403	1.13	(1.02,1.26)	378	1.14	(1.02,1.28)	394	1.09	(0.98,1.21)	413	1.06	(0.95,1.18)	413	1.05	(0.94,1.18)

SDQ: Strengths and Difficulties Questionnaire, DIA: Dominic Interactive for Adolescents, PFOA: perfluorooctanoic acid, PFNA: perfluorononanoic acid, PFDA: perfluorodecanoic acid, PFUnDA: perfluoroundecanoic acid, PFHxS: perfluorohexanesulfonic acid, PFOS: perfluorooctane sulfonic acid, aMR: adjusted mean ratio, CI: confidence interval  
Negative binomial regression models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week), smoking status at inclusion (smoker vs. nonsmoker) and child sex; <sup>a</sup> models further adjusted for  $\gamma$ -hexachlorocyclohexane (detected vs. non-detected); <sup>b</sup> models further adjusted for Dieldrin (in 3 groups: ≥median of detected values, ≥LOD and < median of detected values vs. non-detected)

Table S12: Posterior inclusion probability – Bayesian Kernel Machine Regression (BKMR) models (n= 378) - PELAGIE mother-child cohort, Brittany, France

Exposure (log <sub>2</sub> µg/L)	Posterior Inclusion Probability		
	SDQ Externalizing N=378	DIA Internalizing N=378	DIA Internalizing with co-exposures <sup>a</sup> N=353
PFOA	0.46	0.08	0.06
PFNA	0.16	0.15	0.17
PFDA	0.10	0.47	0.29
PFUnDA	0.20	0.08	0.15
PFHxS	0.15	0.05	0.05
PFOS	0.11	0.05	0.07

SDQ: Strengths and Difficulties Questionnaire, DIA: Dominic Interactive for Adolescents, PFOA: perfluorooctanoic acid, PFNA: perfluorononanoic acid, PFDA: perfluorodecanoic acid, PFUnDA: perfluoroundecanoic acid, PFHxS: perfluorohexanesulfonic acid, PFOS: perfluoroctane sulfonic acid.

Models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week), smoking status at inclusion (smoker vs. nonsmoker) and child sex.

<sup>a</sup> model further adjusted for gamma-hexachlorocyclohexane (detected vs. non-detected) and Dieldrin (in 3 groups: ≥median of detected values, ≥LOD and < median of detected values vs. non-detected)

Table S13: Overall PFAS mixture effect for SDQ Externalizing and DIA Internalizing scores – change in estimate (and 95% credible intervals) for concurrent increase of exposures compared to the 25th percentile and posterior inclusion probabilities (PIP) – Bayesian Kernel Machine Regression (BKMR) models (n= 378) - PELAGIE mother-child cohort, Brittany, France

Quantile	SDQ externalizing score			DIA internalizing score		
	Estimate	SD	95%CI	Estimate	SD	95%CI
0.25	0	0	(0, 0)	0	0	(0, 0)
0.30	0.02	0.04	(-0.05, 0.09)	0.09	0.09	(-0.1, 0.27)
0.35	0.03	0.07	(-0.09, 0.16)	0.13	0.14	(-0.15, 0.41)
0.40	0.06	0.11	(-0.15, 0.28)	0.18	0.20	(-0.2, 0.57)
0.45	0.08	0.14	(-0.2, 0.36)	0.24	0.26	(-0.26, 0.74)
0.50	0.09	0.17	(-0.25, 0.43)	0.28	0.30	(-0.31, 0.87)
0.55	0.11	0.20	(-0.28, 0.51)	0.30	0.33	(-0.34, 0.95)
0.60	0.13	0.23	(-0.31, 0.57)	0.36	0.39	(-0.4, 1.12)
0.65	0.15	0.26	(-0.36, 0.66)	0.39	0.43	(-0.45, 1.23)
0.70	0.17	0.28	(-0.39, 0.72)	0.43	0.47	(-0.5, 1.35)
0.75	0.19	0.32	(-0.43, 0.81)	0.46	0.51	(-0.54, 1.45)

SDQ: Strengths and Difficulties Questionnaire, DIA: Dominic Interactive for Adolescents, PFOA: perfluorooctanoic acid, PFNA: perfluorononanoic acid, PFDA: perfluorodecanoic acid, PFUnDA: perfluoroundecanoic acid, PFHxS: perfluorohexanesulfonic acid, PFOS: perfluoroctane sulfonic acid.

Models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week), smoking status at inclusion (smoker vs. nonsmoker) and child sex.

Table S14: Change in estimate (and 95% credible intervals) with all other exposures fixed at specified quantiles from the multipollutant BKMR analyses for SDQ Externalizing subscale (A) and DIA Internalizing subscale (B) – Bayesian Kernel Machine Regression (BKMR) models (n= 378) – PELAGIE mother-child cohort, Brittany, France

Quantile	Exposure	Concentration ( $\mu\text{g/L}$ )	SDQ externalizing score			DIA internalizing score		
			Estimate	SD	95% Credible Interval	Estimate	SD	95% Credible Interval
0.25	PFOA	1.76	0.26	0.35	(-0.42, 0.94)	0.01	0.17	(-0.32, 0.34)
0.25	PFNA	0.27	0.03	0.15	(-0.26, 0.33)	0.05	0.30	(-0.54, 0.64)
0.25	PFDA	0.08	-0.01	0.10	(-0.21, 0.20)	0.39	0.52	(-0.64, 1.41)
0.25	PFUnDA	0.05	-0.09	0.22	(-0.52, 0.34)	0.00	0.16	(-0.32, 0.32)
0.25	PFHxS	0.42	-0.05	0.16	(-0.36, 0.26)	0.00	0.10	(-0.21, 0.20)
0.25	PFOS	3.70	-0.02	0.11	(-0.24, 0.21)	0.00	0.12	(-0.23, 0.23)
0.5	PFOA	2.31	0.29	0.37	(-0.45, 1.02)	0.01	0.16	(-0.30, 0.33)
0.5	PFNA	0.36	0.04	0.16	(-0.27, 0.36)	0.06	0.29	(-0.51, 0.63)
0.5	PFDA	0.10	0.00	0.10	(-0.19, 0.19)	0.39	0.52	(-0.63, 1.41)
0.5	PFUnDA	0.07	-0.08	0.21	(-0.50, 0.33)	-0.01	0.16	(-0.32, 0.31)
0.5	PFHxS	0.56	-0.03	0.13	(-0.30, 0.23)	0.00	0.10	(-0.19, 0.19)
0.5	PFOS	4.79	-0.01	0.10	(-0.21, 0.19)	0.00	0.11	(-0.22, 0.22)
0.75	PFOA	2.94	0.30	0.40	(-0.48, 1.09)	0.02	0.16	(-0.30, 0.34)
0.75	PFNA	0.47	0.05	0.17	(-0.29, 0.39)	0.07	0.30	(-0.53, 0.66)
0.75	PFDA	0.13	0.00	0.10	(-0.20, 0.20)	0.39	0.53	(-0.65, 1.44)
0.75	PFUnDA	0.09	-0.08	0.21	(-0.49, 0.33)	-0.01	0.17	(-0.34, 0.33)
0.75	PFHxS	0.70	-0.02	0.13	(-0.27, 0.22)	0.00	0.11	(-0.20, 0.21)
0.75	PFOS	6.05	-0.01	0.10	(-0.2, 0.19)	0.00	0.12	(-0.24, 0.24)

Models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week), smoking status at inclusion (smoker vs. nonsmoker) and child sex.

Table S15. Exposure levels (wet weight, log<sub>2</sub> transformed, centered on the median and IQR scaled) for compounds included in BKMR models (n=378) – PELAGIE mother-child cohort, Brittany, France.

Exposure	Percentile		
	25%	50%	75%
PFOA ( $\mu\text{g/L}$ )	1.759	2.309	2.943
log <sub>2</sub> PFOA	0.815	1.207	1.557
log <sub>2</sub> PFOA median centered IQR scaled	-0.478	0.057	0.533
PFNA ( $\mu\text{g/L}$ )	0.266	0.357	0.471
log <sub>2</sub> PFNA	-1.909	-1.488	-1.087
log <sub>2</sub> PFNA median centered IQR scaled	-0.451	0.057	0.540
PFDA ( $\mu\text{g/L}$ )	0.076	0.103	0.131
log <sub>2</sub> PFDA	-3.718	-3.279	-2.932
log <sub>2</sub> PFDA median centered IQR scaled	-0.533	0.018	0.453
PFUnDA ( $\mu\text{g/L}$ )	0.048	0.070	0.090
log <sub>2</sub> PFUnDA	-4.381	-3.837	-3.474
log <sub>2</sub> PFUnDA median centered IQR scaled	-0.548	0.046	0.441
PFHxS ( $\mu\text{g/L}$ )	0.422	0.564	0.702
log <sub>2</sub> PFHxS	-1.246	-0.826	-0.511
log <sub>2</sub> PFHxS median centered IQR scaled	-0.547	0.030	0.463
PFOS ( $\mu\text{g/L}$ )	3.701	4.791	6.053
log <sub>2</sub> PFOS	1.888	2.260	2.598
log <sub>2</sub> PFOS median centered IQR scaled	-0.426	0.075	0.529

## Figures

Figure S1 – Flow chart

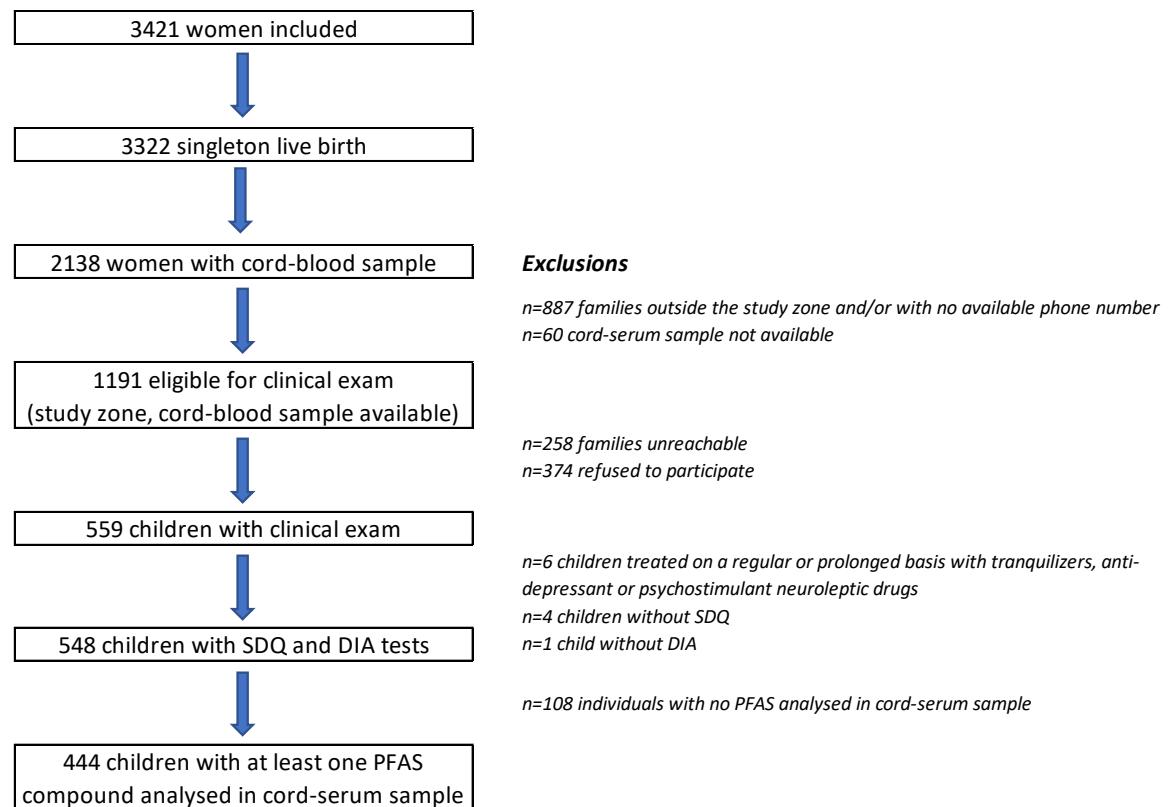


Figure S2 – Directed acyclic graph

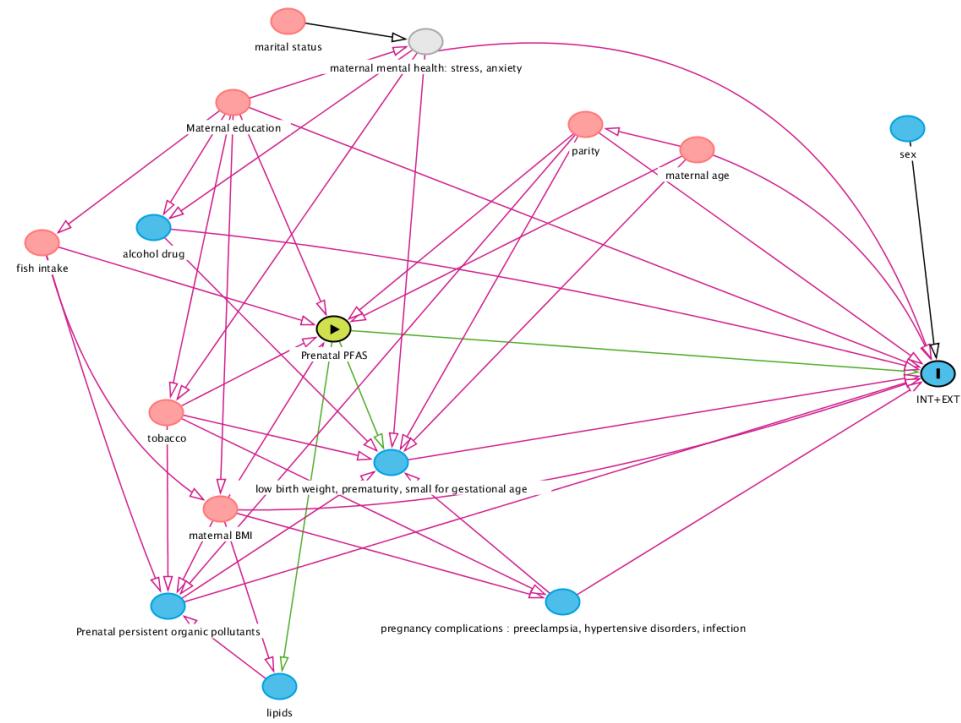


Figure S3 : Spearman correlation coefficients between detected values of cord-serum concentration of POPs and PFASs

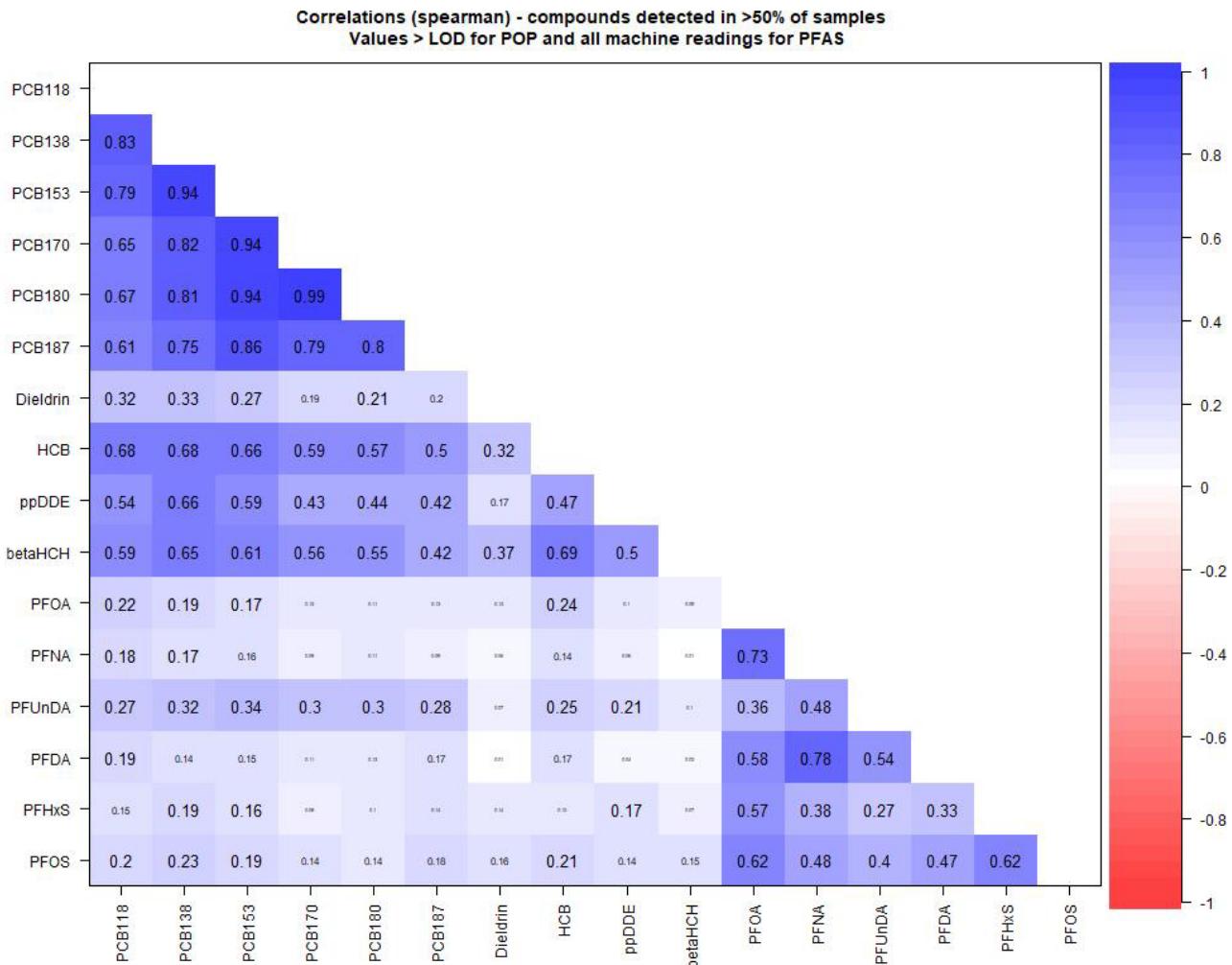
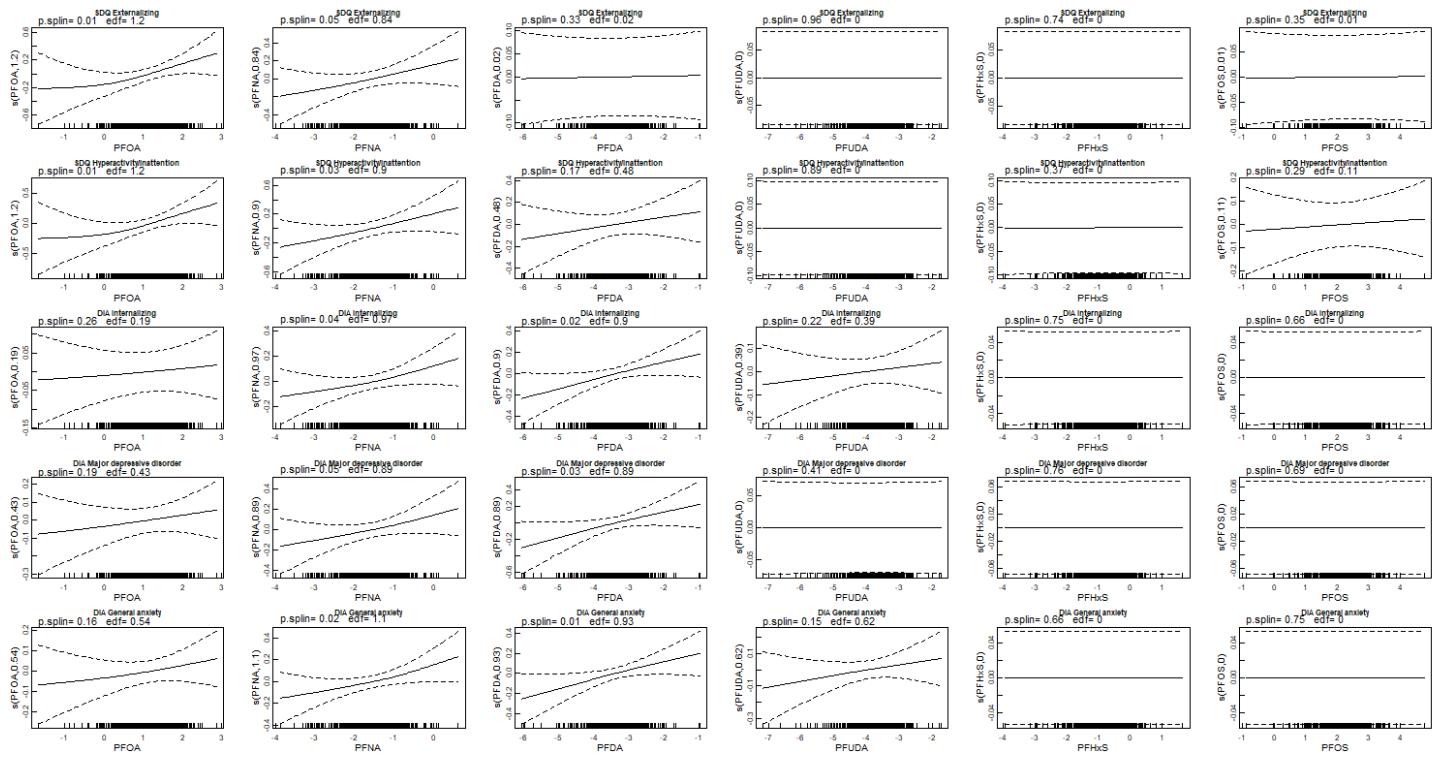


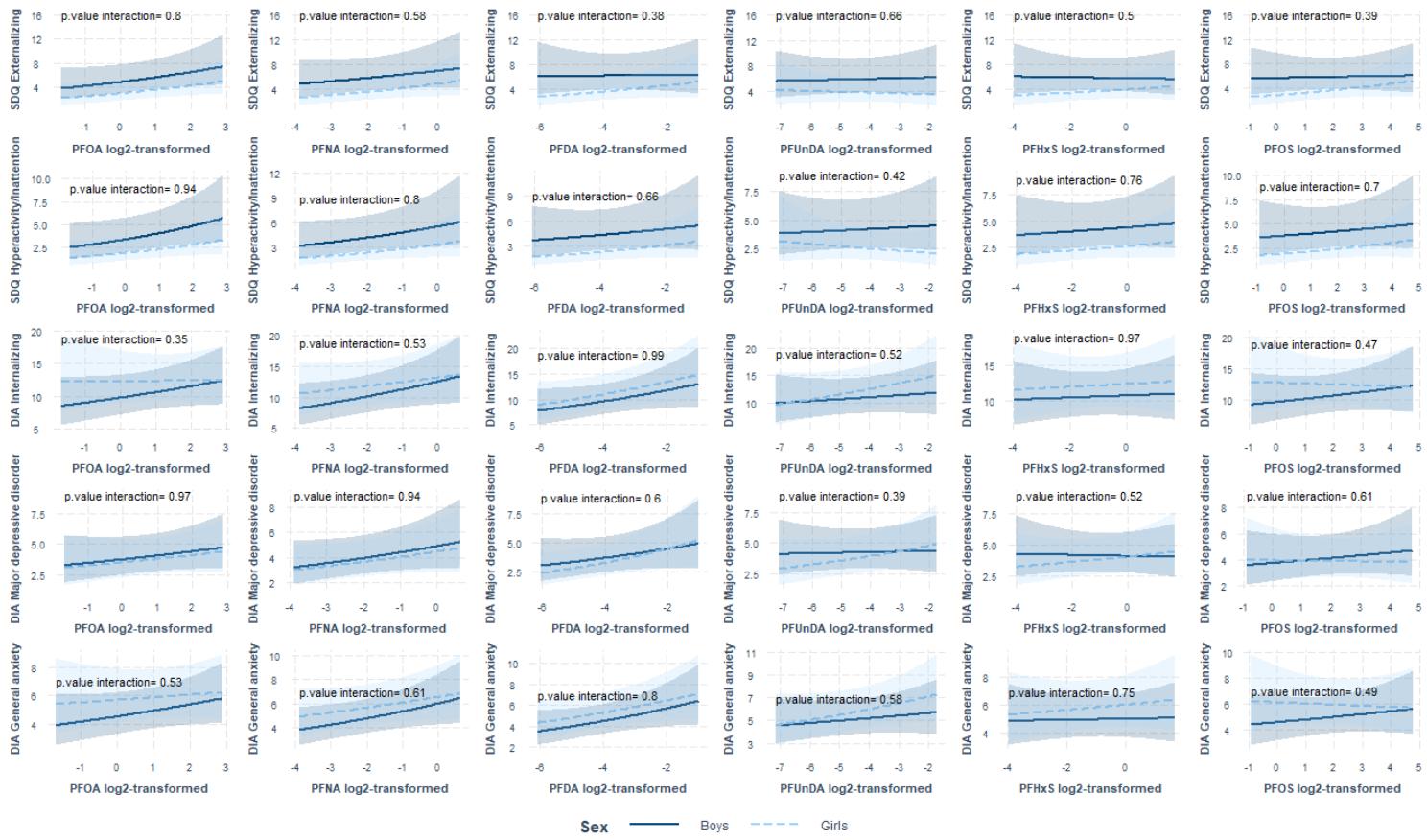
Figure S4 – Associations between prenatal exposure to PFAS and child behavior – Results for the generalized additive models including restricted cubic splines



SDQ: Strengths and Difficulties Questionnaire, DIA: Dominic Interactive for Adolescents, PFOA: perfluorooctanoic acid, PFNA: perfluorononanoic acid, PFDA: perfluorodecanoic acid, PFUnDA: perfluoroundecanoic acid, PFHxS: perfluorohexanesulfonic acid, PFOS: perfluorooctane sulfonic acid, psplin: pvalue for the exposure included as a restricted cubic spline; edf: effective degree of freedom.

Negative binomial regression models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week), smoking status at inclusion (smoker vs. nonsmoker) and child sex.

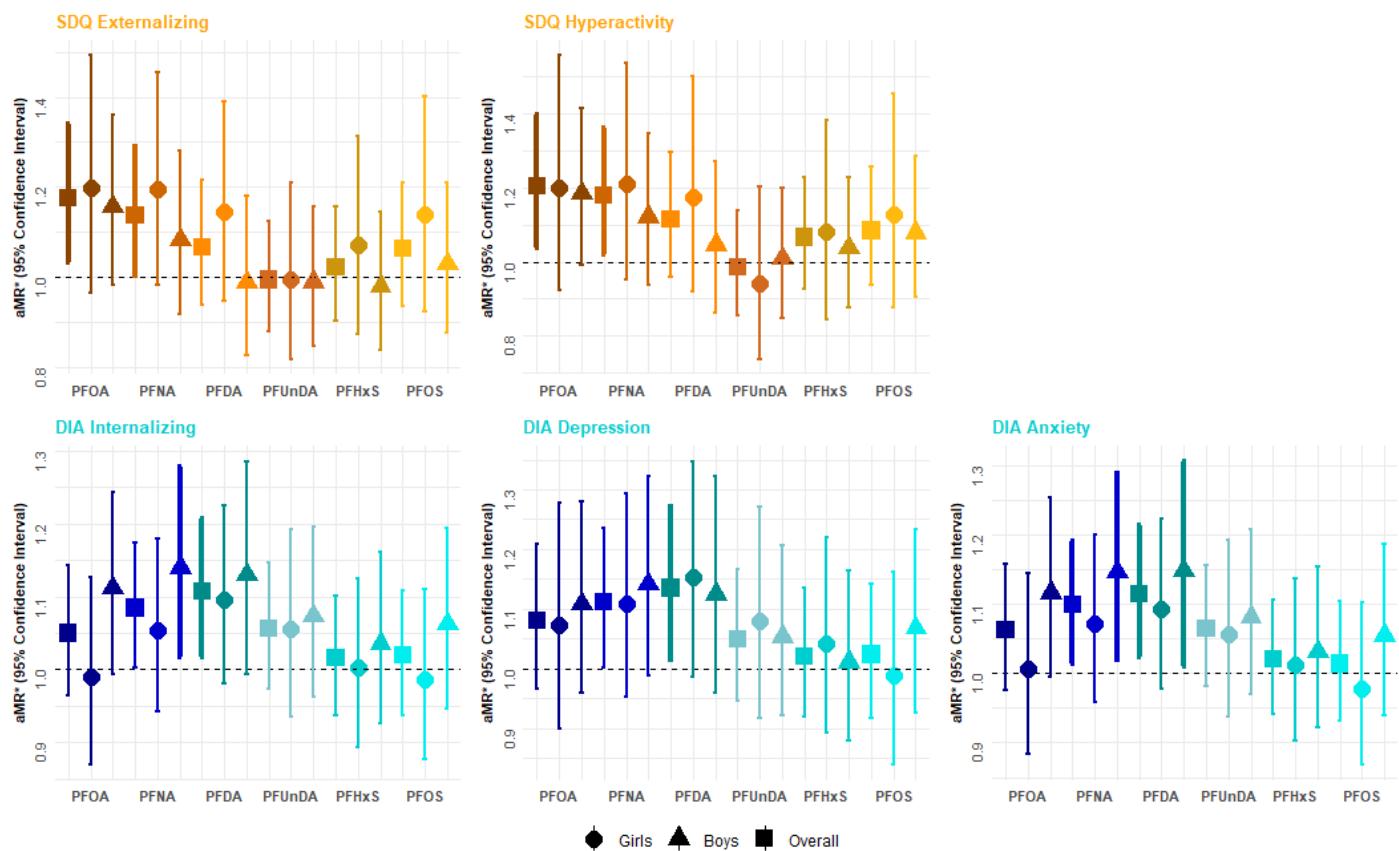
Figure S5 – Associations between prenatal exposure to PFAS and child behavior – Results for negative binomial regression models including an interaction term between exposure and sex – Scores for males and females and 95%CI



SDQ: Strengths and Difficulties Questionnaire, DIA: Dominic Interactive for Adolescents, PFOA: perfluorooctanoic acid, PFNA: perfluorononanoic acid, PFDA: perfluorodecanoic acid, PFUnDA: perfluoroundecanoic acid, PFHxS: perfluorohexanesulfonic acid, PFOS: perfluoroctane sulfonic acid, CI: confidence interval.

Negative binomial regression models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week), smoking status at inclusion (smoker vs. nonsmoker), child sex and including an interaction term between child sex and exposure.

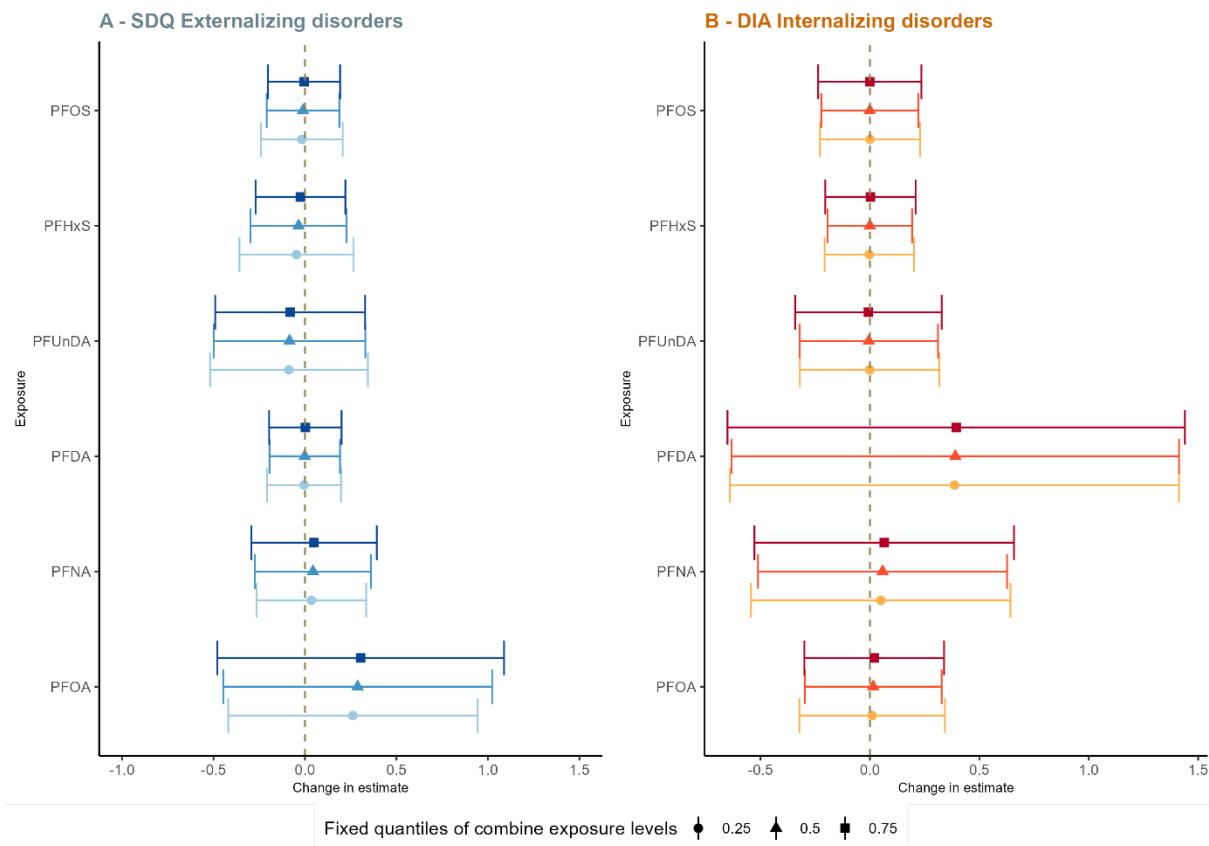
Figure S6 – Associations between prenatal exposure to PFAS measured in cord serum and behavior scores at age 12, overall and for females and males separately – Results from the single pollutant approach, PELAGIE mother-child cohort.



*SDQ: Strengths and Difficulties Questionnaire, DIA: Dominic Interactive for Adolescents, PFOA: perfluorooctanoic acid, PFNA: perfluorononanoic acid, PFDA: perfluorodecanoic acid, PFUnDA: perfluoroundecanoic acid, PFHxS: perfluorohexanesulfonic acid, PFOS: perfluoroctane sulfonic acid, aMR: adjusted mean ratio, CI: confidence interval.*

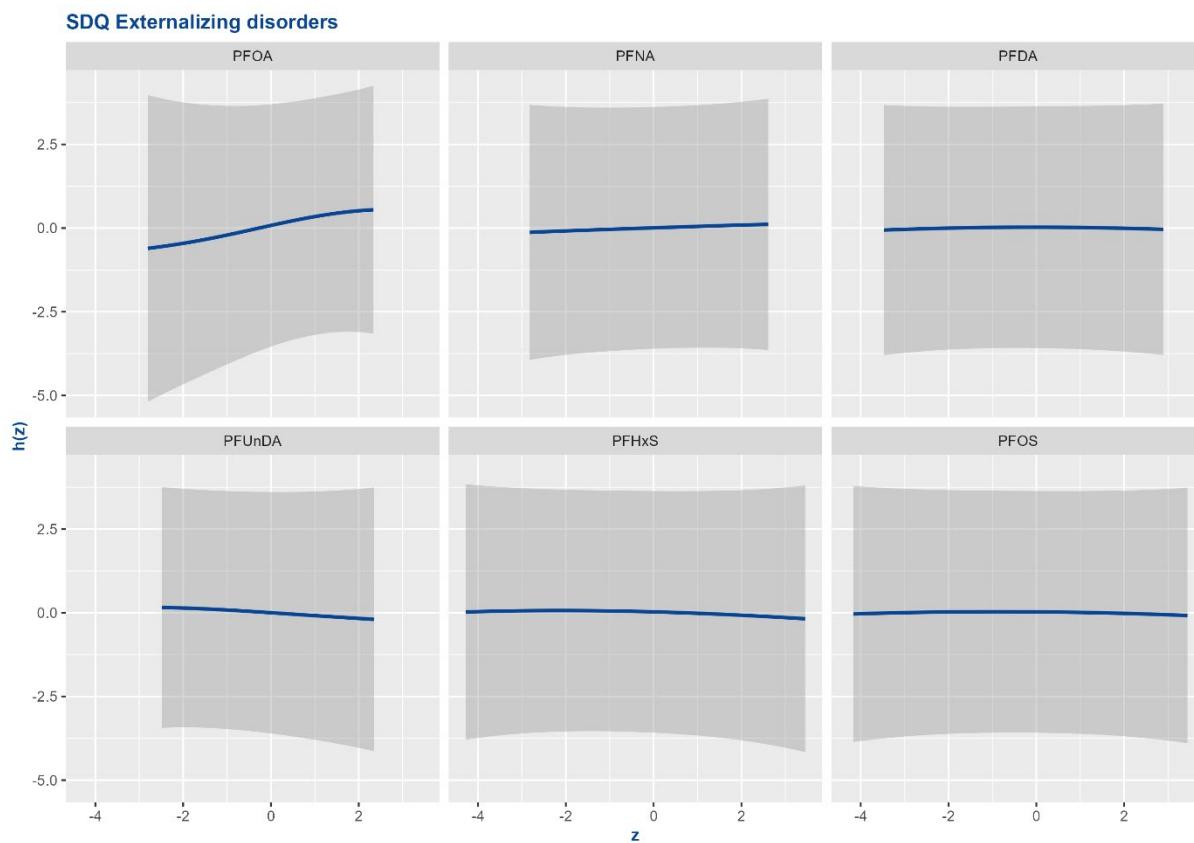
*Negative binomial regression models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week) and smoking status at inclusion (smoker vs. nonsmoker) and child sex (for models including the entire population). See Table S6 for numeric data.*

Figure S7: Change in estimate (and 95% credible intervals) with all other exposures fixed at specified quantiles from the multipollutant BKMR analyses for SDQ Externalizing subscale (A) and DIA Internalizing subscale (B) – Bayesian Kernel Machine Regression (BKMR) models (n= 378) – PELAGIE mother-child cohort, Brittany, France



Models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week), smoking status at inclusion (smoker vs. nonsmoker) and child sex. See Table S14 for numeric data.

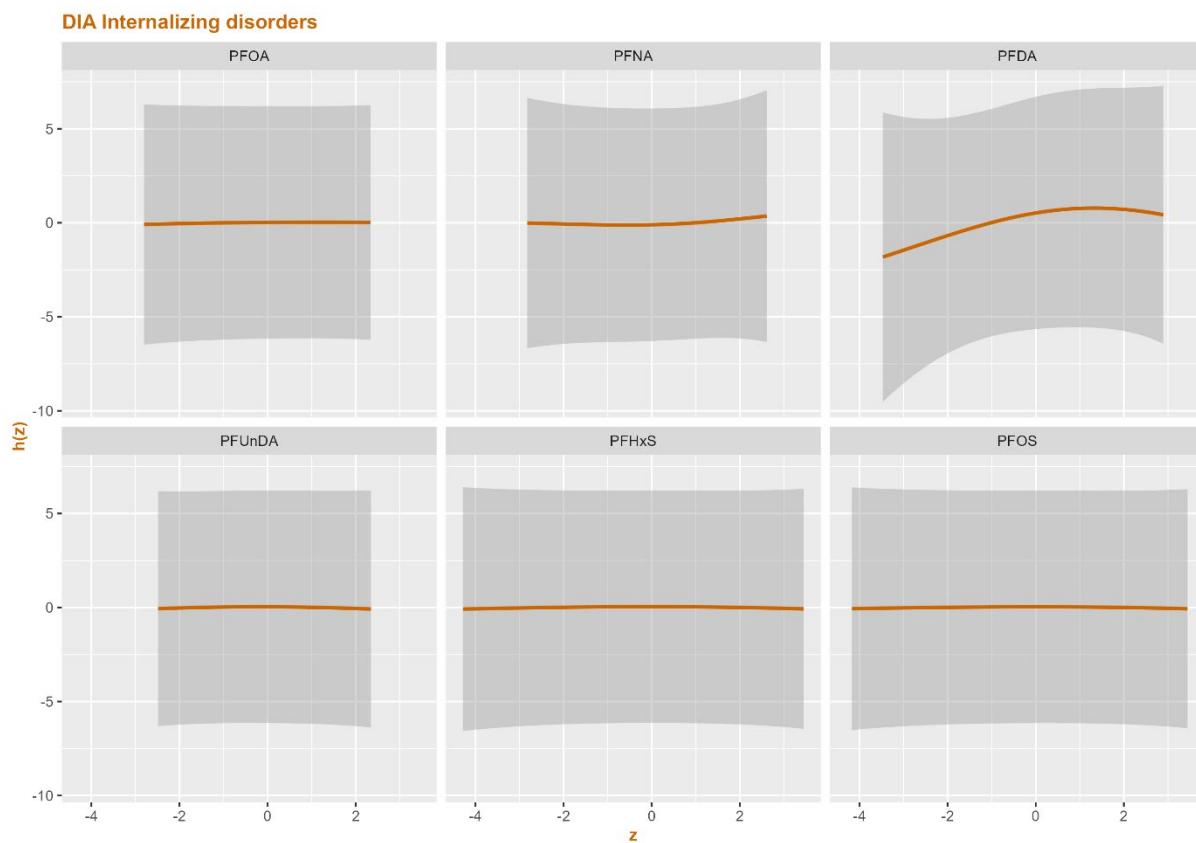
Figure S8: Exposure-response relationships for prenatal exposure to a mixture of PFAS and SDQ externalizing disorders score among 12-years-old children – Bayesian Kernel Machine Regression (BKMR) models (n= 378) - PELAGIE mother-child cohort, Brittany, France



*Note: Blue lines represent the exposure-response relationships for individual chemicals from the BKMR analysis. Shaded areas represent 95% credible intervals. We would interpret this as the predicted difference in the exposure-response function at a given exposure level (e.g., PFOA) compared to the median exposure level of that chemical, while holding all other chemical exposures at their median.*

*Models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week), smoking status at inclusion (smoker vs. nonsmoker) and child sex. See Table S15 for exposure levels.*

Figure S9: Exposure-response relationships for prenatal exposure to a mixture of PFAS and DIA internalizing subscale among 12-years-old children – Bayesian Kernel Machine Regression (BKMR) models (n= 378) - PELAGIE mother-child cohort, Brittany, France



Note: Orange lines represent the exposure-response relationships for individual chemicals from the BKMR analysis. Shaded areas represent 95% credible intervals. We would interpret this as the predicted difference in the exposure-response function at a given exposure level (e.g., PFOA) compared to the median exposure level of that chemical, while holding all other chemical exposures at their median.

Models adjusted for maternal age at the beginning of pregnancy (in years), maternal pre-pregnancy BMI (in 3 categories: <18.5kg/m<sup>2</sup>, 18.5-25 kg/m<sup>2</sup>, ≥25 kg/m<sup>2</sup>), maternal education (in three groups: < 12 years, 12 years, > 12 years), parity (nulliparous vs. multiparous), maternal fish intake (<1 once/month, at least once a month, at least twice a week), smoking status at inclusion (smoker vs. nonsmoker) and child sex. See Table S15 for exposure levels.